

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Raman Patel et al.

Examiner:

Serial No:

Group Art Unit:

Filed:

Date:

January 8, 2004

For: **"TOUGHENED POLYMER COMPOSITIONS"**

Commissioner for Patents
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir,

The present invention relates to toughened thermoplastic compositions comprising a thermoplastic polymer toughened by the inclusion of a thermoplastic elastomer derived from a particulate rubber dynamically vulcanized in the presence of a matrix polymer. The toughened thermoplastic composition exhibits properties including toughness, improved impact resistance, and improved hardness. The compositions are utilized wherever toughened, high performance polymers are desired. A method for forming the toughened polymer compositions is also described. Processing methods, such as rotational molding, utilizing the toughened polymer compositions are described.

As authorized and encouraged under 37 C.F.R. §1.97 – 1.99, Applicant hereby cites as a means of complying with the duty of disclosure set for in 37 C.F.R. §1.56, the following patents and or documents, which the Examiner should consider with respect to the above-identified U.S. Patent Application.

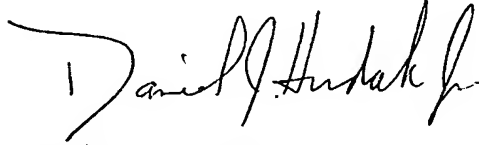
US PATENTS/DOCUMENT		
PATENT/DOCUMENT NO.	DATE	NAME
US2002/0072561	6/13/02	Johoji et al.
US2002/0188079	12/12/02	Qiao et al.
US2003/0119988	6/26/03	Johnson et al.
4,130,535	12/19/78	Coran et al.
4,195,000	3/25/80	Charles et al.
4,616,042	10/7/86	Avakian
4,753,980	6/28/88	Deyrup
4,833,194	5/23/89	Kuan et al.
4,861,828	8/29/89	Waggoner
5,008,332	4/16/91	Sano et al.
5,055,525	10/8/91	Henton et al.
5,104,924	4/14/92	Goetz et al.
5,266,638	11/30/93	Niessner et al.
5,237,000	8/17/93	Lausberg et al.
5,277,864	1/11/94	Blatz
5,290,886	3/1/94	Ellul
5,310,800	5/10/94	Shimizu et al.
5,338,801	8/16/94	Eppert, Jr.
5,552,482	9/3/96	Berta
5,556,908	9/17/96	Chung et al.
5,594,059	1/14/97	Mason et al.
5,723,528	3/3/98	Mason
5,726,236	3/10/98	Mason et al.
5,817,723	10/6/98	Flexman, Jr. et al.
5,861,463	1/19/99	Sehanobish et al.
5,936,058	8/10/99	Schauder
6,020,046	2/1/00	Abhau
6,060,549	5/9/00	Li et al.
6,140,420	10/31/00	Sehanobish et al.
6,217,961	4/17/01	Hert et al.
6,218,474	4/17/01	Valligny et al.
6,281,286	8/28/01	Chorvath et al.
6,500,900	12/31/02	Itoh

In accordance with 37 C.F.R. §1.98(a)(2)(i), no copies of the cited references are furnished.

An official action considering the enclosed items is earnestly solicited.

Respectfully submitted,

HUDAK, SHUNK & FARINE CO. LPA

A handwritten signature in black ink, appearing to read "Daniel J. Hudak Jr.", written in a cursive style.

Daniel J. Hudak, Jr.
Registration No. 47,669

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Attorney Docket No.: TEK-B

Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)	Atty. Docket No.: TEK-B	Serial No.:
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U.S. PATENT DOCUMENTS/PUBLISHED APPLICATIONS

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	AH	4,833,194	5/23/89	Kuan et al.			

FOREIGN PATENT DOCUMENTS

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	AL						
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